

A study by the Nuclear Waste Technical Review Board is relevant.

A series of eleven reports by Nevada state consultant Jerry Szymanski say that there is evidence of geothermal water in the area, which could eat through the containers and spread the radioactive materials a long way.

- 2 | ② It is illegal, since the people of Nevada, their governor and Nuclear Agency director and the land's rightful owners, the Western Shoshone nation, all oppose it. | Yucca Mountain is sacred to the Shoshone, and religious sites merit protection under the law. The Ruby Valley Treaty of 1863 guaranteed the

RECEIVED

September 14, 2001

SEP 21 2001

To the Dept. of Energy

Re: The use of Yucca Mountain as a repository for nuclear waste

I am opposed to it for the following reasons:

- 1 | ① It would endanger ^{children, animals, insects and plants} and adults, present and future, because the buried waste could explode or leak into the ground water, contaminating the environment. Drs. Charles Beaman and Francisco Venneni, physicists at Los Alamos Nuclear Laboratory, have said that it could explode.

Shoshone's rightful ownership
of their land in exchange for cer-
tain rights which the tribe granted
and honored. ^{The inland site would}
^{also} ^{suppose many en route.}

③ Out of sight, out of mind is
a bad policy when it comes to nuc-
lear wastes. Burying them would
hide it and encourage the production

Child in a Straw Hat; Mary CASSATT; National Gallery of Art,
Washington; Collection of Mr. and Mrs. Paul Mellon.
(Date: c. 1886)

of more, leading many to believe
that the problem of their disposal
was solved. Nuclear wastes should
be kept above ground in strong con-
tainers and inspected regularly.

If burial is chosen, Yucca Mountain
is especially unsuitable, since
the volcanic ground is quite soluble.

Even without an explosion ^{or earthquake} the wastes
would emit great heat and radiation,
making the place toxic until
the year 207,000! Nancy Reimer



Scientists Fear Atomic Explosion of Buried Waste
Argument Strikes New Blow Against a Proposal for a Repository in Nevada

22

by William J. Broad

010486

Debate has broken out among Federal scientists over whether the planned underground dump for the nation's high-level atomic wastes in Nevada might erupt in a nuclear explosion, scattering radioactivity to the winds or into ground water or both.

The debate, set off by scientists at the Los Alamos National Laboratory in New Mexico, is the latest blow to the planned repository deep below Yucca Mountain in the desert about 100 miles northwest of Las Vegas. Opponents of nuclear power and Nevada officials have long assailed the project as ill-conceived and ill-managed, and it has encountered numerous delays.

Even if scientists can debunk the new argument that buried waste at Yucca

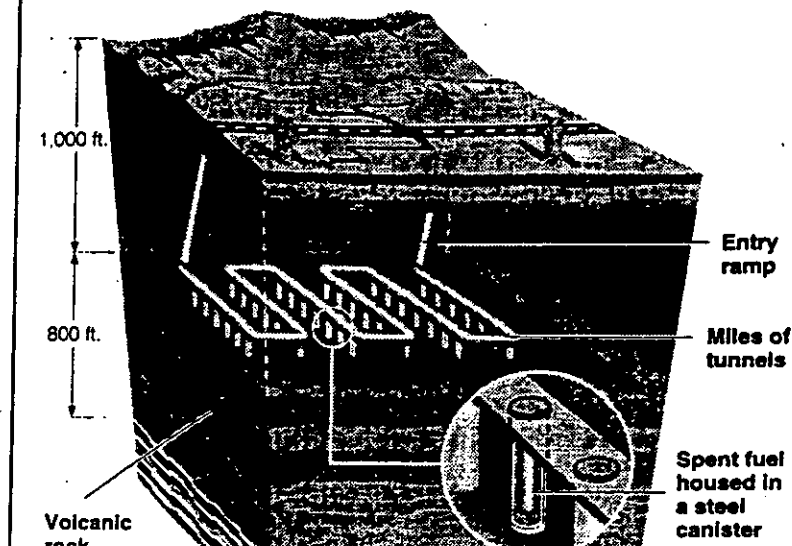
Mountain might eventually explode, the existence of so serious a dispute so late in the planning process might cripple the plan or even kill it. Planning for the repository began eight years ago and studies of its feasibility have so far cost more than \$1.7 billion. The Federal Government wants to open the repository in 2010 as a permanent solution to the problem of disposing of wastes from nuclear power plants and from the production of nuclear warheads.

The possibility that buried wastes might detonate in a nuclear explosion was raised privately last year by Dr. Charles D. Bowman and Dr. Francisco Veneri, both physicists at Los Alamos, the birthplace of the atomic bomb. In response, lab manag-

BLUEPRINT

A Labyrinth of Radioactivity

A schematic diagram based on the plan for the Yucca Mountain complex. Spent nuclear fuel would be buried a thousand feet below the ground in thousands of canisters, enough to hold 70,000 tons.



ers formed three teams with a total of 30 scientists to investigate the idea and, if possible, disprove it.

While uncovering many problems with the thesis, the teams were unable to lay it to rest, laboratory officials say. So the lab is now making the dispute public approval after a careful study of the area's geology, a labyrinth of bunkers carved beneath the mountain would hold thousands of steel canisters for 10,000 years, until radioactive decay rendered the wastes less hazardous.

The spent fuel from nuclear reactors is permeated with plutonium, which is a main ingredient used in making nuclear bombs.

Since plutonium 239 has a half-life of 24,360 years, significant amounts of it would remain active for more than 50,000 years, long after the steel canisters that once held the radioactive material had dissolved. (A radioactive substance's half-life is the period required for the disintegration of half of its atoms.)

With the end of the cold war, the Nevada site has increasingly been studied for a possible added role as a repository for the plutonium from scrapped nuclear arms. . . .

The most basic solution, Dr. Bowman said, would be removing all fissionable material from nuclear waste in a process known as reprocessing or by transmuting it in his proposed accelerator. Other

in scientific papers and is considering having it aired at large scientific meetings as well. . . .

Highly radioactive wastes are the main orphan of the nuclear era, having found no permanent home over the decades. In theory, if the Yucca plan wins possible steps would include making steel canisters smaller and spreading them out over larger areas in underground galleries—expensive steps in a project already expected to cost \$15 billion or more.

A different precaution, Dr. Bowman said, would be to abandon the Yucca site, where the volcanic ground is relatively soluble. Instead, the deep repository might be dug in granite, where migration of materials would be slower and more difficult. . . .

Dr. Daniel A. Dreyfus, the head of civilian radioactive waste management at the Energy Department in Washington, which runs Los Alamos and the Yucca Mountain studies, said he was keeping an open mind on whether Dr. Bowman's thesis might trigger an overhaul of the project. . . .

"Whether Yucca Mountain is the right site, I don't know. Maybe there's no good solution," he added. "But walking away from the problem is no solution either. We better keep trying, because we already made the decision to have the wastes in the first place."

Source: *New York Times*, 3-5-95.

Appendices

Nuke waste now in water, experts claim

By Matthew L. Wald
NEW YORK TIMES

RICHLAND, Wash. — Nuclear waste has leaked out of the giant underground tanks at the Hanford nuclear reservation here and flowed into the soil, and some experts are convinced it has reached underground water supplies and is flowing toward the Columbia River.

For years, the Energy Department argued that any radioactive material that leaked would be chemically bound to the soil and would not flow, but recent measurements show that cesium and other materials have moved farther than expected.

A group of outside experts brought in by the Energy Department said in January that the model the department had used to calculate the spread of underground materials was "inadequate and unrealistic."

The experts' report said that migration of radioactive cesium through the dirt "does not necessarily indicate an immediate health risk to the surrounding population," but it added that the implications for a cleanup were immense.

The department has been trying to reduce the possibility of future leaks by pumping liquids out of the 28 oldest tanks, emptying about five each year for the last few years.

But in the fiscal year that began Oct. 1, the plan is to begin pumping only two, because of budget constraints. The delay horrifies some environmental experts.

The tanks, some with a capacity of up to 1 million gallons, were built in haste and buried at the Hanford reservation during the Manhattan Project, the World War II effort to build the atomic bomb, and the Cold War.

The tanks hold half a century's worth of highly radioactive and poisonous byproducts of nuclear weapons production.

Carson City, Nev.

Possible site hazard worries nuke director

Nevada's Nuclear Agency director says he is disappointed federal experts don't see evidence of geothermal water at a proposed Yucca Mountain nuclear waste dump site as a danger.

But Bob Loux said a study suggested by the Nuclear Waste Technical Review Board should help to finally settle the issue.

A series of 11 reports by state consultant Jerry Szymanski suggested there's evidence of geothermal water in the area where the federal government wants to store nuclear waste beneath Yucca Mountain.

If true, that would disqualify the site because geothermal hot water might eat through waste containers and spread radioactive material into the groundwater beneath southern Nevada.

— Wire reports

For a full version of these stories go to Hot CoCo, www.hotcoco.com, and enter "California" in the Quick word box.

See
cont'd on
pg 4

"Nuke waste
now in water
inputs down"

The liquids, solids and sludges are a complex mixture of materials created in military reactors, and various chemicals that were used to recover uranium and plutonium from that reactor fuel.

If leaks from the tanks reach the Columbia River through ground water, radioactive material would eventually be incorporated into the food chain and could expose people to radiation for centuries.

The government has always had vague plans to convert the wastes into some other material that would be safer for long-term storage.

Now, officials say, a plan for a permanent form of disposal is taking shape that would contain the radioactive material in glass. But that plan has raised a new question — how to scrape the sludges and salts out of tanks that are already leaking.

The standard method is high-pressure water jets, but that could cause new leaks.

The disposal system involves binding the wastes into logs of glass, inside stainless steel canisters. This is already being done at a nuclear

The effort to build a glass plant has moved forward only in fits and starts. This is the third effort to build one; the first two failed.

In the dirt under the tanks are two of the radioactive elements that are formed when plutonium is produced, technetium 99 and strontium 90.

"Our tank waste is now in the ground water and is moving into



Yucca Mountain Unsafe for Storage of Nuclear Waste

In 1987 legislators established the Office of the Nuclear Negotiator under the DOE. Its job was to find some place—preferably Indian land—to store the high-level, radioactive waste from 100 nuclear power plants scattered around the country in thirty states.

A new report, compiling the findings of independent geologists from the U.S. and abroad working under a Nevada Nuclear Projects Agency contract, concludes that minerals found on the surface of Yucca Mountain—the proposed high-level nuclear waste dump—were carried there by warm springs from under the mountain.

This report has grave implications for the government's plans to construct the

waste dump at Yucca Mountain. If water rose through the mountain to the surface before, it could do so again; and if radioactive waste were entombed in the mountain, the water could flood the repository and spread the waste throughout the environment.

The new study confirms the position of former Yucca Mountain Project geologist Jerry Szymanski, who resigned from the Department of Energy in 1992 after the agency rejected his findings. While the current water table is substantially below the level of the proposed waste dump, Szymanski believes that earthquakes could cause warm water to squirt to the surface from deep within the earth's crust.

—Source: Citizen Alert, April 1994



Western Shoshones Protest Nuclear Testing on Their Lands

by Judy Wells

More than fifteen hundred peace activists from around the world joined members of the Western Shoshone nation at the Nevada Test Site on April 3-8, 1991, to protest nuclear weapons testing at the site, which is illegally located on sovereign Shoshone lands. Organized by the Western Shoshone National Council and several grassroots activist groups, the six-day event included teach-ins, ceremonies, rallies, and nonviolent civil disobedience actions that resulted in more than 650 arrests.

From a flatbed truck equipped with loudspeakers, Western Shoshone leader Raymond Yowell said, "We're here to show our displeasure for what's going on. It's not good for health. It's not good for

land. It's certainly against our religion." Western Shoshone elder Corbin Harney led protesters in a ceremony honoring Mother Earth. Later, he and Yowell were the first to be arrested during the event.

Hopi spiritual leader Thomas Banyacya conducted a workshop on the problems nuclear toxins are causing for humans and wildlife worldwide. "Every time they test, they kill millions of people in the next generation," he said.

During the last forty years, the Nevada Test Site area has been rocked and jarred by over seven hundred nuclear explosions, both above ground and below. Radiation has contaminated soil, air, and groundwater in the area; cancers and physical deformities are appearing at alarming rates.

in people and animals living near the test site. The devastation is an incomprehensible sacrilege to Shoshones who revere the Earth as Mother.

So far, however, the Shoshones have been unable to prevent the nuclear explosions, despite the fact that they have never sold or ceded their lands to the U.S., nor have they ever granted permission to test bombs there. President Harry Truman seized the land by executive order in 1951, in direct violation of the 1863 Treaty of Ruby Valley between the Shoshones and the U.S.

The Ruby Valley treaty guaranteed the Shoshones rightful ownership of their land in return for granting the U.S. safe passage for stagecoach, railway, and telegraph lines, and permission to establish military posts, mines, farms, and ranches in Shoshone territory. Although the Shoshones have honored the bargain, the U.S. has violated it many times. Since the treaty was signed, the U.S. government has placed nearly ninety percent of Shoshone lands under the control of governmental departments, including the Department of Energy, claiming that the lands were needed for national defense, conservation projects, recreation, and profit-making ventures.

For forty years, Shoshone people have been fighting an uphill battle to regain control of their lands. A decade ago, non-Shoshone anti-nuclear activists began supporting the Shoshones, and the Nevada Test Site has since become a focal point for

the U.S. peace movement and campaign against nuclear testing.

In 1986, the Western Shoshone National Council introduced a new strategy in its struggle. Operating on the premise that only Shoshone people can legally grant or deny access to Shoshone land, the council began issuing anti-nuclear activists permits allowing them onto Western Shoshone land at the test site—knowing that facility officials would have the activists arrested as "trespassers." In challenging such arrests, the council contends that the U.S. government cannot convict people of trespassing on land that it doesn't own. So far, the tactic has been working. Charges of trespass have been consistently dropped.

In issuing the permits, the council has stated, "The Western Shoshone nation is calling upon citizens of the United States, as well as the world community of nations, to demand that the United States terminate its invasion of our lands for the evil purpose of testing nuclear bombs and other weapons of war. We must have your political help because we are militarily unable to resist the United States."

The Shoshone plea for help has resulted in a groundswell of response from citizens worldwide. Large-scale demonstrations are now held frequently at the site.

Participants in the action included representatives of indigenous nations from around the world that have suffered devastating effects from nuclear testing in their homelands. Also included were

representatives of anti-nuclear organizations, such as the National Association of Radiation Survivors; Downwinders (people living downwind from the test site who have suffered effects of its radiation); Alliance of Atomic Veterans (soldiers who were intentionally exposed to radiation); and activists from anti-nuclear movements in Tahiti, the Marshall Islands, Japan, the USSR, and Europe.

Treaty of Ruby Valley, 1863

Treaty between the United States of America and the Western Bands of Shoshone Indians. Concluded October 1, 1863; Ratification advised with amendment, June 26, 1866; Amendment assented to June 17, 1869; Proclaimed October 21, 1969.

ULYSSES S. GRANT, PRESIDENT OF THE UNITED STATES OF AMERICA, TO ALL AND SINGULAR TO WHOM THESE PRESENTS SHALL COME, GREETING:

Whereas a Treaty was made and concluded at Ruby Valley, in the Territory of Nevada, on the first day of October, in the year of our Lord one thousand eight hundred and sixty-three, by and between James W. Nye and James Duane Doty, Commissioners, on the part of the United States, and Temoak, Mo-ho-a, Kirk-weedgwa, To-nag, and

other Chiefs, Principal Men, and Warriors of the Western Bands of the Shoshonee Nation of Indians, on the part of said bands of Indians, and duly authorized thereto by them, which Treaty is in the words and figures following to wit:

Treaty of Peace and Friendship made at Ruby Valley, in the Territory of Nevada, this first day of October, A.D. one thousand eight hundred and sixty-three, between the United States of America, represented by the undersigned Commissioners, and the Western Bands of the Shoshonee Nation of Indians, represented by their Chiefs and Principal Men and Warriors, as follows:

ARTICLE I.

Peace and friendship shall be hereafter established and maintained between the

Western Bands of the Shoshonee nation and the people and Government of the United States; and the said bands stipulate and agree that hostilities and all depredations upon the emigrant trains, the mail and telegraph lines, and upon the citizens of the United States within their country, shall cease.

ARTICLE II.

The several routes of travel through the Shoshonee country, now or hereafter used by white men, shall be forever free, and unobstructed by the said bands, for the use of the government of the United States, and of all emigrants and travelers under its authority and protection, without molestation or injury from them. And if depredations are at any time committed by bad men of their nation, the offenders shall be immediately taken and delivered up to the proper officers of the United States, to be punished as their offences shall deserve; and the safety of all travellers passing peaceably over either said routes is hereby guarantied by said bands.

Military posts may be established by the President of the United States along said routes or elsewhere in their country; and station houses may be erected and occupied at such points as may be necessary for the comfort and convenience of travellers or for the mail or telegraph companies.

ARTICLE III.

The telegraph and overland stage lines having been established and operated by companies under the authority of the United States through a part of the Sho-

shonee country, it is expressly agreed that the same may be continued without hindrance, molestation, or injury from the people of said bands, and that their property and the lives and property of passengers in the stages and of the employees of the respective companies, shall be protected by them. And further, it being understood that provision has been made by the government of the United States for the construction of a railway from the plains west to the Pacific ocean, it is stipulated by said bands that the said railway or its branches may be located, constructed, and operated, and without molestation from them, through any portion of country claimed or occupied by them.

ARTICLE IV.

It is further agreed by the parties hereto, that the Shoshonee country may be explored and prospected for gold and silver, or other minerals; and when mines are discovered, they may be worked, and mining and agricultural settlements formed, and ranches established whenever they may be required. Mills may be erected and timber taken for their use, as also for building or other purposes in any part of the country claimed by said bands.

ARTICLE V.

It is understood that the boundaries of the country claimed and occupied by said bands are defined and described by them as follows:

On the north by Wong-gogo-da Mountains and Shoshonee River Valley, on the

west by Su-non-to-yah Mountains or Smith Creek Mountains; on the south by Wi-co-bah and the Colorado Desert; on the east by Po-ho-no-be Valley or Steptoe Valley and Great Salt Lake Valley.

ARTICLE VI.

The said bands agree that whenever the President of the United States shall deem it expedient for them to abandon the roaming life, which they now lead, and become herdsmen or agriculturalists, he is hereby authorized to make such reservations for their use as he may deem necessary within the country above described; and they do also hereby agree to remove their camps to such reservations as he may indicate, and to reside and remain therein.

ARTICLE VII.

The United States, being aware of the inconvenience resulting to the Indians in consequence of the driving away and destruction of game along the routes travelled by white men, and by the formation of agricultural and mining settlements, are willing to fairly compensate them for the same, therefore, and in consideration of the proceeding stipulations, and of their faithful observance by the said bands, the United States promise and agree to pay to the said bands of the Shoshonee nation parties hereto, annually for the term of twenty years, the sum of five thousand dollars in such articles, including cattle for herding or other purposes, as the President of the United States shall deem suitable for their

wants and condition, either as hunters or herdsmen. And the said bands hereby acknowledge the reception of the said stipulated annuities as a full compensation and equivalent for the loss of game and the rights and privileges hereby conceded.

ARTICLE VIII.

The said bands hereby acknowledge that they have received from said commissioners provisions and clothing amounting to thousand dollars as presents at the conclusion of this treaty.

Done at Ruby Valley the day and year above written.

JAMES W. NYE
JAMES DUANE DOTY
TE-MOAK
MO-HO-A
KIRK-WEEDGWA
TO-NAG
TO-SO-WEE-SO-OP
SOW-ER-E-GAH
PO-ON-GO-SAH
PAR-A-WOAT-ZE
GA-HA-DIER
KO-RO-KOAT-ZE
PON-GE-MAH
BUCK

Witnesses:

J.B. MOORE, Lt. Col. 3rd Inf, Cal. Vol.
JACOB T. LOCKHART,
Indian Agent Nev. Ter.
HENRY BUTTERFIELD, Interpreter.

And whereas, the said Treaty having been submitted to the Senate of the United

States for its constitutional action thereon, the Senate did, on the twenty-sixth day of June, one thousand eight hundred and sixty-six, advise and consent to the ratification of the same, with an amendment, by a resolution in the words and figures following, to wit:

IN EXECUTIVE SESSION,
SENATE OF THE UNITED STATES,

June 26, 1866.

Resolved, (two-thirds of the Senators present concurring,) That the Senate advise and consent to the ratification of the Treaty of peace and friendship made at Ruby Valley, in the Territory of Nevada, the first day of October, A.D. one thousand eight hundred and sixty-three, between the United States of America, represented by their Commissioners, and the Western Bands of the Shoshonee Nation of Indians, represented by their Chiefs and Principal Men and Warriors, with the following

AMENDMENT:

Fill the blank in the 8th article with the word five.

Attest:

J.W. FORNEY,
Secretary

And whereas, the foregoing amendment having been fully explained and interpreted to the undersigned Chiefs, Principal Men, and Warriors of the Western Bands of the Shoshonee Nation of Indians, they did, on the seventeenth day of June, one thousand eight hundred and sixty-nine, give their free

and voluntary assent to the said amendment, in the words and figures following, to wit:

Whereas the Senate of the United States, in executive session, did advise and consent to the ratification of the Treaty of peace and friendship, made at Ruby Valley, in the Territory of Nevada, on the first day of October, one thousand eight hundred and sixty-three, by the Commissioners on the part of the United States and the Western Bands of the Shoshonee Nation of Indians, represented by their Chiefs and Principal Men and Warriors, with the following amendment:

"Fill the blank in the 8th article with the word five."

And whereas the foregoing amendment has been fully interpreted and explained to the undersigned Chiefs and Principal Men and Warriors of the aforesaid Western Bands of the Shoshonee Nation of Indians, we do hereby agree and assent to the same.

Done at Ruby Valley, Nevada, on this 17th day of June, A.D. 1869.

Attest:	TIM-OOK
J.H. DAWLEY	BUCK
R.B. SCOTT	FRANK
W.R. REYNOLDS	CHARLEY TIMOOK
LOUIS GRINNELL,	TO-NAG
Interpreter	

Now, therefore, be it known that I, ULYSSES S. GRANT, President of the United States of America, do, in pursuance of the advice and consent of the Senate, as

expressed in its resolution of the twenty-sixth of June, one thousand eight hundred and sixty-six, accept, ratify, and confirm the said Treaty, with the amendment aforesaid.

In testimony whereof, I have hereto signed my name, and have caused the seal of the United States to be affixed.

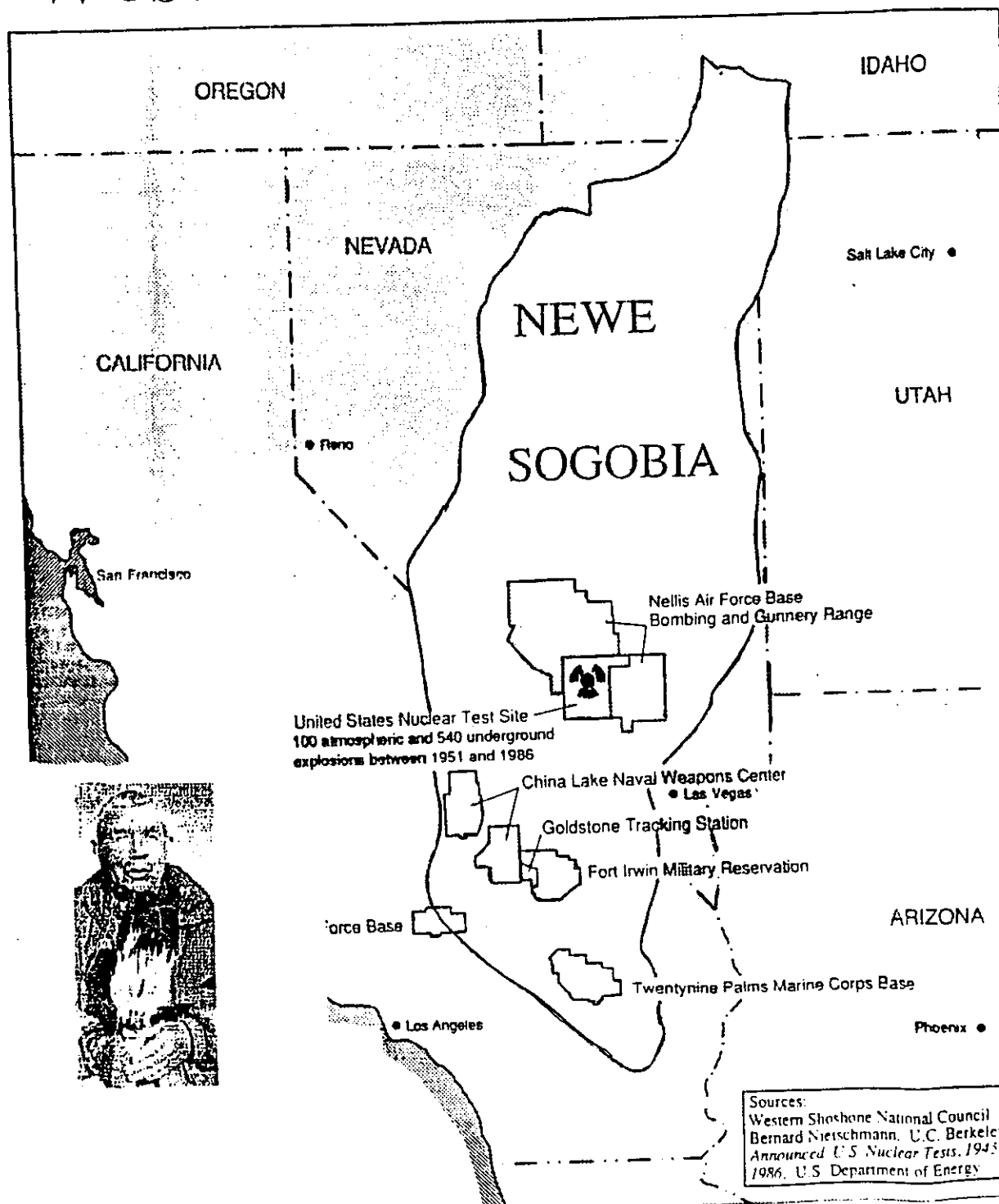
Done at the city of Washington, this twenty-first day of October, in the year of

our Lord one thousand eight hundred and sixty-nine, and of the Independence of the United States of America the ninety-fourth.

U.S. GRANT

By the President:
HAMILTON FISH
Secretary of State.

The U.S. Military Invasion of the Western Shoshone Nation*





Message from Corbin

010486

We are beginning to see the cancer throughout the world from the nuclear power as they call it. Those are the reasons why I travel throughout world to notify the people how dangerous this is. Lately we have got together at Yucca Mountain, to pray for the land, for it to go back the nature way, for all the creatures there to be clean. Nuclear waste is going to be traveling throughout the world to come to Yucca Mountain. We don't appreciate this at all. It is very dangerous stuff. The DOE wants to put it on the highway and on the trains. I don't believe anyone will appreciate it. We the people are going to have to say no to nuclear power, without the nuclear power we can use solar or wind. Those things can be developed by the scientists, but they are too busy thinking about their own pocket. Somehow my peoples land, the Native people's land has been used for a bad thing. If we don't move from our land, then they say they're going to move us. This land is here for all of us to use, not to use for things that are going to shorten our lives.

We need to take care of the Mother, the only Mother Earth we got. Let's think about the food that grows on our mother. If we kill all the food, we're not going to have food for the animal life, the bird life and so on. I think we are beginning to see the water getting away from us. Already we see some areas where we can not use the water. We

ENERGY | A Failed Technology

No, no, nuclear

By Huey D. Johnson

Proponents of new nuclear power plants in California want us to believe nuclear energy is "environmentally friendly" because it doesn't emit greenhouse gases, that nuclear plants are safer and that the deadly radioactive waste problem is about to be solved. If you believe all that, you might as well believe in Peter Pan and the tooth fairy.

It's a failed technology. Remember the promises last time around? Nuclear energy was supposed to be safe and clean? It wasn't possible to have an accident?

Then came Chernobyl in 1986 and Three Mile Island in 1989.

The industry's apologists now argue that new technology will prevent similar accidents. Oh yeah? Remember the saying that nothing is so fool-proof that some fool can't muck it up?

The nuclear promoters take heart from a new Field Poll that shows 59 percent of energy-starved Californians now favor building new nuclear plants. With lots of money (most of it coming from us taxpayers), the industry has launched a sophisticated public relations campaign.

Nonetheless, the "new" nuclear technology hasn't been proven. The much-touted pebble-bed reactors haven't had a real test during actual use. And in testimony before Congress, an industry spokesperson couldn't give assurance that there would be no repeat of Three Mile Island.

Owners of nuclear plants still can't buy insurance against reactor accidents.

And the largest problem facing the nuclear industry is still radioactive waste, one of the dead-

liest poisons known to humankind. It lasts thousands of years. It has to be guarded. The eventual cost is astronomical.

I remember they said the basalt rock formations of the upper Co-

come harmless. In the meantime, people can track their increasing cancer rates and decide if they want to continue with nuclear energy.

The industry is also saying nuclear power works in Europe, so

why not here? The answer: cost.

The French government owns and subsidizes its plants, so no one knows the actual costs. The French nuclear industry, estimated to be \$30 billion in debt, has been accused of fiscal irresponsibility.

The president of PG&E once said in a speech that the company was blessed by having had effective opposition to its nuclear program. Had it proceeded to build more nuclear plants, he said, PG&E would have gone bankrupt. (He couldn't have suspected it would go bankrupt anyway, but for different reasons.)

In any case, California can't build any more nuclear plants just now. Proposition 13, enacted by the voters in 1975, requires that a safe waste-storage process be instituted before more plants are built.

There is no effective waste storage yet in this country or elsewhere in the world. The best efforts still are prone to produce leaks or create problems that will haunt us in the future.

The best the nuclear proponents can come up with is a carrot to dangle on a stick. They promise financial rewards will follow solution of the nuclear waste problem. They assume the public is a poor old horse plodding along, trying to reach the carrot, forever out of reach.

Huey D. Johnson, who was secretary of the state Resources Agency under Gov. Jerry Brown, is president of Resource Renewal Institute in San Francisco.



JON KRAUSE / Special to The Chronicle

lumbia River basin were perfect for storage of nuclear waste. Guess what? After the stuff was buried, it leaked. Portland is downstream. The cleanup cost is in the billions. So far:

But the advocates now claim that waste can be buried safely in a Nevada mountain. Maybe they picked Nevada because of its legalized gambling.

I prefer an idea from the late David Brower. Let volunteers store nuclear waste. Keep it where people will be aware of it. Put it in a mailbox in each community in America so people can watch it and be aware of the deadly waste for as long as it takes for it to be-



Chernobyl: A young girl waits for cancer treatment at a Ukrainian clinic

But the horrors released by the plant are not only physical. *The Moscow Times* reported in January that 18 percent of the deaths of workers involved in the cleanup of the stricken plant were by suicide. Many of the workers reportedly suffered from nervous system and immune system disorders and high levels of stress.

People's fears—and their anti-nuclear opinions—were intensified in the wake of two separate fires at the Chernobyl plant in two days this January, as well as a report last November that safety systems had been repeatedly shut off at another Ukrainian nuclear plant in an effort to boost power production. The Ukrainian government has promised to shut down the Chernobyl plant completely by the end of this year. The country currently receives 25 percent of its electricity from nuclear power.

The government of neighboring Russia announced plans in January to build 30 new nuclear power reactors by 2010, at least one of which would be of a design similar to the Chernobyl plant. Russia currently has 28 operating reactors, virtually all of them built before the Chernobyl disaster.

—BRIGITTE KERPSACK AND JEFF SHRIVER
ASSISTED WITH RESEARCH.

X See pg 17 for beginning of article

010486

Chernobyl: A Grim Anniversary

■ The disastrous fire at the Chernobyl nuclear power plant seven years ago continues to extract a heavy toll on the people of the former Soviet Union and elsewhere. Ukrainian officials report that more than 8,000 people have died from the April 1986 event, which released as much radiation as 1,000 Hiroshima bombs.

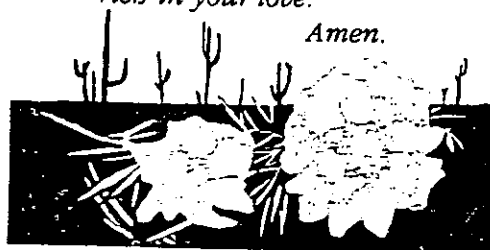
Many more deaths are expected from the lingering effects of the world's worst nuclear accident. Incidences of children's thyroid cancer, immune deficiency diseases, and other radiation-related illnesses have multiplied in recent years and are likely to get worse.

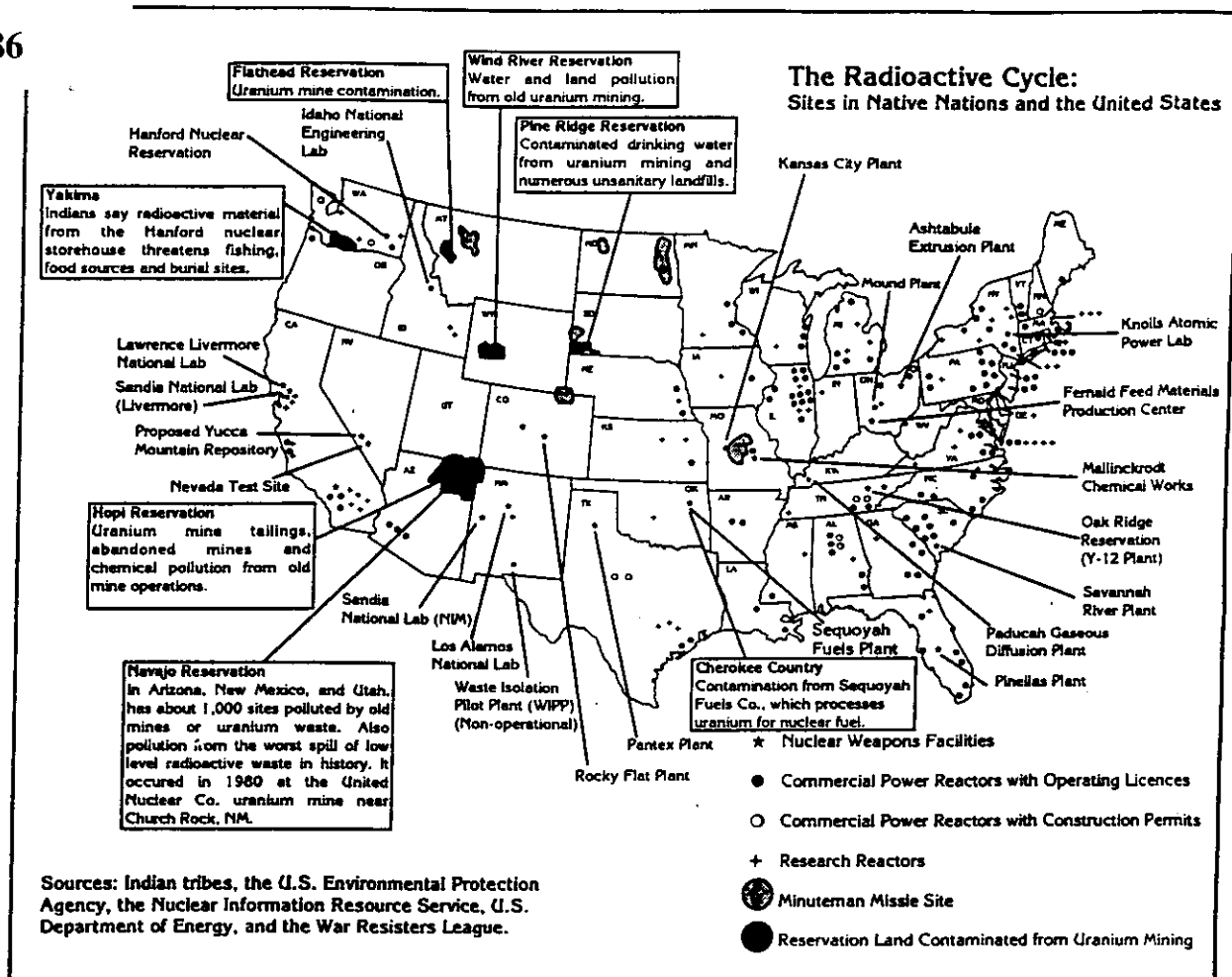
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article)*

*A PRAYER
FOR THE END OF
NUCLEAR WEAPONS TESTING*

*God of faithfulness and promise,
Lover of all creation,
Hear our prayer for an end to
nuclear weapons testing.
You named us prophets to preserve
and nurture your creation:
all peoples, all life,
indeed, the earth itself.
Enlighten our efforts to end
nuclear weapons testing;
Energize our wills for the
restoration of creation.
Inspire and guide all who pray
and work nonviolently,
So that your promised peace will
fill our world with lives
rich in your love.*

Amen.





Archbishop Dom Helder Camara (1909-1999)
"This is the place of the greatest act of violence in the world, it should be the place of the greatest acts of nonviolence".
 —Dom Helder Camara speaking at the Nevada Test Site





Nuclear Waste Transportation

"With Yucca Mountain, Nevada, being named by Congress as the only site to be studied for disposal of the irradiated fuel from the nation's commercial nuclear power plants, the question of how this nuclear waste would be transported to Yucca Mountain becomes an important one for everyone in the nation. . . .

"Using Department of Energy information and route selection and analysis codes, along with specific reactor information, we have mapped the most likely highway and rail transport routes from each reactor location to Yucca Mountain. . . .

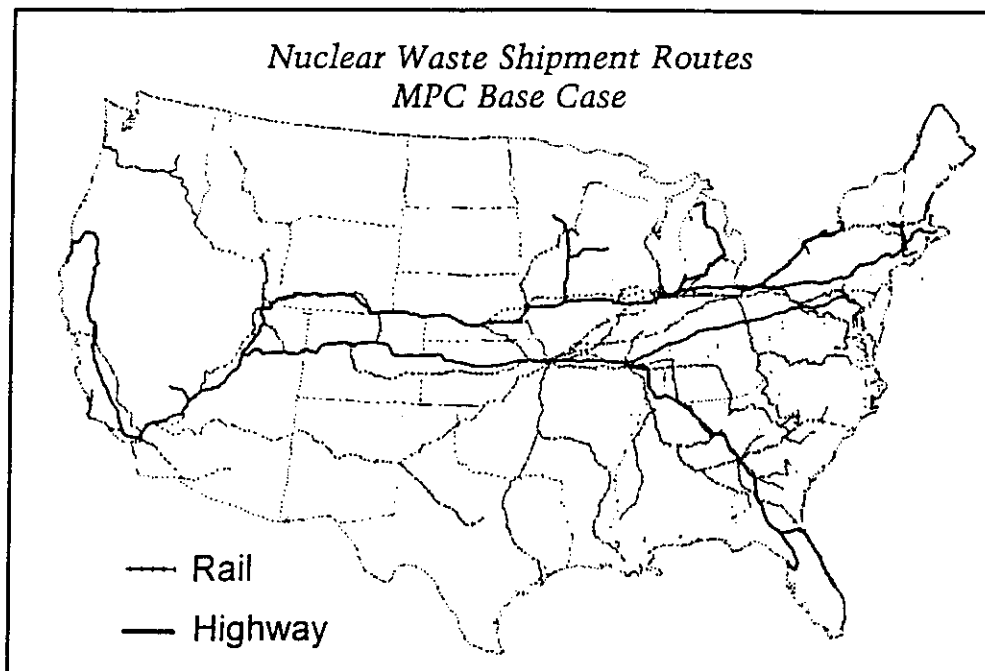
"This means the utilities' irradiated nuclear fuel could be moving on the nation's highways and rails three years from now (1998). We in Nevada have long been concerned about the safety of possible

rail and highway routes to Yucca Mountain, not just in Nevada which currently has no rail access to Yucca Mountain, but from the 75 commercial reactor locations spread over 34 states."

—Source: Agency for Nuclear Projects,
Nuclear Waste Project Office,
Carson City, NV, 2/95

Transportation of high-level nuclear wastes from reactor sites to proposed storage facilities is a pressing concern for all states. The U.S. Department of Energy could be transporting spent fuel and HLNW (high-level nuclear waste) on the nation's highways and railroads to Yucca Mountain, Nevada by 1998.

If a high-level nuclear waste dump opens in Nevada, up to 2,500 shipments per year of highly radioactive material will



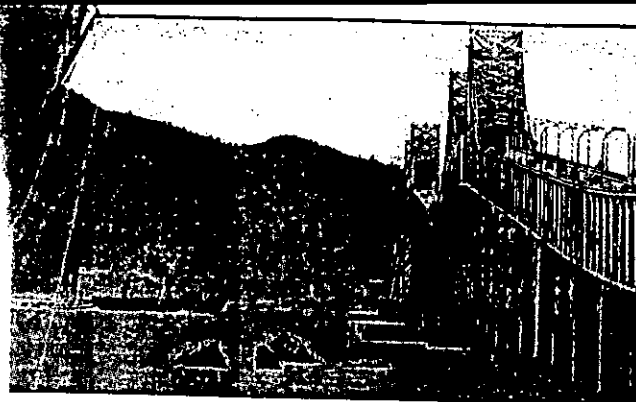
be moving along interstate highways and railroads.

Waste will pass through densely populated cities like Los Angeles, Las Vegas, Albuquerque, Denver and Salt Lake City, and many others.

In a severe accident, radioactive waste will contaminate homes, neighborhoods, and major business centers to a radius of 500 miles or more. Is your local community prepared? Are there alternatives?

A FLOATING CHERNOBYL HEADING OUR WAY! PLUTONIUM WASTE BOAT LEAVES FRANCE FOR JAPAN

In 1992, 43 nations banned from their territorial waters the *Akatsuki Maru*, carrying 100 nuclear weapons worth of plutonium from France to Japan. Now Japan intends to transport ultra toxic plutonium wastes around the globe against the cry of en-route nations. The first of many planned shipments is expected to



Tanker believed to be carrying nuclear waste prepares to cross under Richmond-San Rafael Bridge on Tuesday.

Nuclear cargo enters Bay amid fear, secrecy

Protest greets radioactive waste

FROM EXAMINER STAFF AND WIRE REPORTS

A closely guarded tanker believed to be carrying a load of used nuclear fuel slipped smoothly into California, its passage marked by scattered protesters, curious onlookers and anxious emergency crews.

Officials wouldn't confirm that the ship Bluebird that passed under the Golden Gate and into the Bay at about 2 p.m. Tuesday was carrying the spent fuel from South Korea, but it was escorted by several Coast Guard ships, an indication it was traveling under tight security.

The red tanker with a blue stripe later docked at the Concord Naval Weapons Station, 25 miles inland, where the spent fuel was transferred to trains bound for the National Engineering and Environmental Laboratory in Idaho, according to news reports.

Many of the boats following the tanker on the cold, foggy day were environmentalists in small boats calling themselves a "Peace Navy."

"Our principle concern at this point is safety, so we are not inter-

ested in interfering with the shipment," said Jacqueline Cabasso, executive director of the Western States Legal Foundation.

Among other security measures, the California Highway Patrol cut off pedestrian and bike access to the Golden Gate for a short time Tuesday morning while the tanker went under the bridge. The road was not closed to cars.

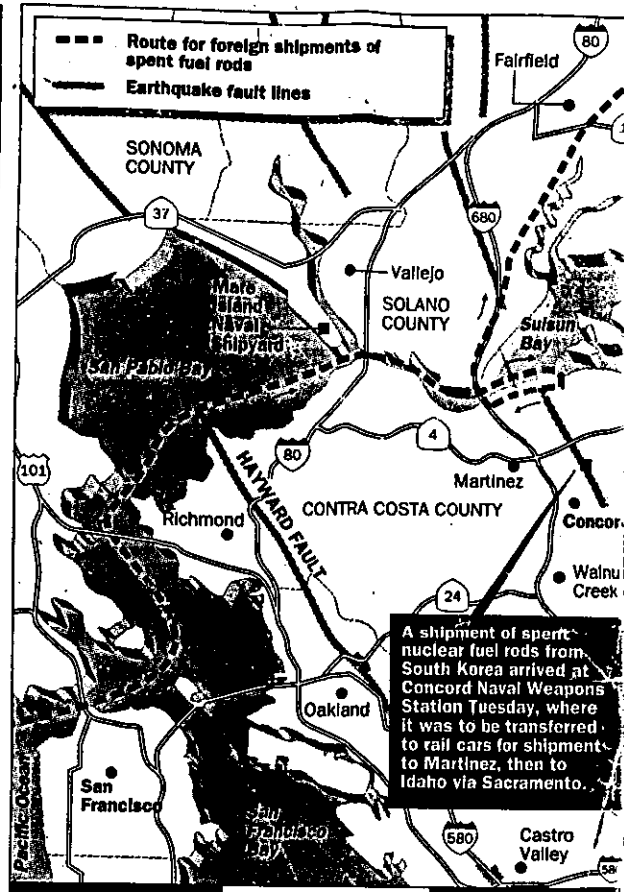
People walking about the bay-side Marina District were bothered by the arrival of the waste.

"They should keep them over there in the country that they got them in," said Mike Cash, 52, of Deming, N.M. "Don't ship them over here to the U.S.A. We don't need them over here."

Some who were concerned seemed resigned to the shipment.

"It has to come through somewhere," said Tom Goossens, 49, of San Francisco. "I'm sure (the government) examined the various possibilities and came up with this as the least expensive. But someone is going to be affected, and no one is happy with nuclear waste coming in."

On the other side of the Bay, some 30 protesters and onlookers gathered at an Amtrak station in Martinez, where the trains will pass through after they leave Con-



cord.

The eclectic group, which included aging hippies and clean-cut high school kids, held cardboard anti-nuclear signs and circled around speakers who denounced the transportation of foreign nuclear waste as dangerous and hypocritical.

At one point, a plane flew overhead towing a banner reading, "Danger, Nuclear Train Coming."

Tuesday's shipment is the first of five scheduled to follow the same route over the next 11 years. The shipment carried about 360 fuel rods, according to Department of Energy officials.

"The public demonstrations have been very moderate, and ... we're very thankful of that," said John Belluardo of the Energy Department, which is bringing the fuel through California.

Those who plan to protest in Davis, Sacramento and other sites along the route say they intend to keep it that way.

"We certainly don't expect to be able to stop this shipment," said

Marylia Kelly of Tri-Valle CARES in Livermore, one of several groups opposing the return of foreign nuclear fuel rods.

Kelly said protesters were mobilizing so that "if the public all along the transportation routes become more knowledgeable and more vocal, there is a chance of stopping future shipments."

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HOLY NAMES COLLEGE

Jimmy Carter

010486

A Nuclear Crisis

Every five years, the nuclear non-proliferation treaty (NPT) comes up for reassessment by the countries that have signed it. This is the treaty that provides for international restraints (and inspections) on nuclear programs. It covers not only the nuclear nations but 180 other countries as well, including Iran, Iraq, North Korea and Libya. An end to the NPT could terminate many of these inspections and open a Pandora's box of nuclear proliferation in states that already present serious terrorist threats to others.

Now it is time for the 30-year-old NPT to be reviewed (in April, by an international assembly at the United Nations), and, sad to say, the current state of affairs with regard to nuclear proliferation is not good. In fact, I think it can be said that the world is facing a nuclear crisis. Unfortunately, U.S. policy has had a good deal to do with creating it.

At the last reassessment session, in 1995, a large group of non-nuclear nations with the financial resources and technology to develop weap-

ons—including Egypt, Brazil and Argentina—agreed to extend the NPT, but with the proviso that the five nuclear powers take certain specific steps to defuse the nuclear issue: adoption of a comprehensive test ban treaty by 1996; conclusion of negotiations on a Fissile Material Cut-Off Treaty, and "determined pursuit" of efforts to reduce nuclear arsenals, with the ultimate goal of eliminating them.

It is almost universally conceded that none of these commitments has been honored. India and Pakistan have used this failure to justify their joining Israel as nations with recognized nuclear capability that are refusing to comply with NPT restraints. And there has been a disturbing pattern of other provocative developments:

- For the first time I can remember, no series of summit meetings is underway or in preparation to seek further cuts in nuclear arsenals. The START II treaty concluded seven years ago by presidents George Bush and Boris Yeltsin has not been

seriously considered for ratification by the Russian parliament.

- Instead of moving away from reliance on nuclear arsenals since the end of the Cold War, both the United States and NATO have sent disturbing signals to other nations by declaring that these weapons are still the cornerstone of Western security policy, and both have re-emphasized that they will not comply with a "no first use" policy. Russia has reacted to this U.S. and NATO policy by rejecting its previous "no first use" commitment; strapped for funds and unable to maintain its conventional forces of submarines, tanks, artillery, and troops, it is now much more likely to rely on its nuclear arsenal.

- The United States, NATO and others still maintain arsenals of tactical nuclear weapons, including up to 200 nuclear weapons in Western Europe.

- Despite the efforts of Gens. Lee Butler and Andrew Goodpaster, Adm. Stansfield Turner and other military experts, American and Rus-

sian nuclear missiles are still maintained in a "hair-trigger alert" status, susceptible to being launched in a spur-of-the-moment crisis or even by accident.

- After years of intense negotiation, recent rejection by the U.S. Senate of the Comprehensive Test Ban Treaty was a serious blow to global nuclear control efforts and to confidence in American leadership.

- There is a notable lack of enforcement of the excessively weak international agreements against transfer of fissile materials.

- The prospective adoption by the United States of a limited "Star Wars" missile defense system has already led Russia, China and other nations to declare that this would abrogate the Anti-Ballistic Missile Treaty, which has prevailed since 1972. This could destroy the fabric of existing international agreements among the major powers.

- There is no public effort or comment in the United States or Europe calling for Israel to comply with the NPT or submit to any other re-

straints. At the same time, we fail to acknowledge what a powerful incentive this is to Iran, Syria, Iraq, and Egypt to join the nuclear community.

- The U.S. Arms Control and Disarmament Agency (ACDA) has been recently abolished, removing an often weak but at least identifiable entity to explore arms issues.

I believe that the general public would be extremely concerned if these facts were widely known, but so far such issues have not been on the agenda in presidential debates.

A number of responsible non-nuclear nations, including Brazil, Egypt, Ireland, Mexico, New Zealand, South Africa and Sweden have expressed their disillusionment with the lack of progress toward disarmament. The non-proliferation system may not survive unless the major powers give convincing evidence of compliance with previous commitments.

In April, it is imperative that the Nuclear Nonproliferation Treaty be reconfirmed and subsequently hon-

ored by leaders who are inspired to act wisely and courageously by an informed public. This treaty has been a key deterrent to the proliferation of weapons, and its unraveling would exert powerful pressures even on peace-loving nations to develop a nuclear capability.

All nuclear states must renew efforts to achieve worldwide reduction and ultimate elimination of nuclear weapons. In the meantime, it requires no further negotiations for leaders of nuclear nations to honor existing nuclear security agreements, including the test ban and anti-ballistic missile treaties, and to remove nuclear weapons from their present hair-trigger alert status.

Just as American policy is to blame for many of the problems, so can our influence help resolve the nuclear dilemma that faces the world.

Former President Carter is chairman of the Carter Center in Atlanta.

Solar power nears its day in the sun

Subdivision developers hold key to mass success of fuel alternative

By Eric Bailey
LOS ANGELES TIMES

SAN DIEGO

Tom Day sees a lot to love about his family's brand new house. Perched in a high-end subdivision on this city's booming northeast fringe, the dun-hued Mediterranean boasts a castle-turret entry, a lofty master suite, a mesa-top view.

But aesthetics aren't all that attracted Day. His new home will also help pay the power bill.

With photovoltaic panels atop a triangle of south-facing tile roof and a solar water heater perched along a western ridge, the two-story house is part of a quiet revolution taking shape in these times of energy anemia.

The Day clan just moved into one of California's first solar subdivisions, a new home development that attempts on a mass-production scale to tap the sun's energy — and offset residential utility bills that have been soaring toward the ozone layer.

Hard road to respectability

For the solar industry, it is another important step in an uphill slog for respectability. Energy experts say solar's future could well hinge on whether the building industry embraces it for the thousands of new homes, offices and commercial structures erected each year in California.

Several factors have conspired to make solar an option for builders.

The cost of photovoltaic panels, the thin silicon wafers that turn photons of light into electricity, has dropped dramatically in the last de-

cade. Meanwhile, newly pumped-up government subsidies and skyrocketing electric bills in California have made solar energy tantalizingly competitive with electricity produced by smokestack power plants.

A study at Princeton University concluded earlier this year that California and New York are ripe for explosive growth in solar. Both share the right combination of high electricity prices and white-hot housing markets.

In California, about 150,000 new homes are built in a typical year. If each carried a standard 2-kilowatt photovoltaic system, it would eliminate the need for a 300-megawatt power plant.

"I really think builders are starting to come around," said V. John White, lobbyist for a solar coalition. "We need solar to be like a carpet upgrade or landscaping improvement."

Home buyers benefit

Tom Day and his family are some of the first home-buying pioneers to reap the benefits.

At his old house, Day saw energy costs soar to \$500 one recent month. So solar's clean, inflation-proof power was a no-brainer.

Building solar into new homes has distinct advantages over slapping panels on an existing roof, the standard practice for a generation.

On a new home such as Day's, the system can be designed into the project from the ground up. Installation is less expensive, what with electricians and plumbers already on site. Costs to the developer, Shea Homes,



were cut because the solar panels for the subdivision were purchased in bulk.

Day, meanwhile, avoided a huge upfront hit. To install solar on an existing home, the bill can rise as high as \$20,000 or more without government rebates. Day had to pay \$6,000. Best of all, he rolled it all into the mortgage for his new home at a low interest rate. His electricity costs pencil out much better because of that long-term financing.

The system also adds resale value to his house, no small consideration in a state where homeowners tend to move about every five years. More immediately, he looks forward to watching his electric meter spin backward on occasions when the system generates more juice than the family uses. On average, the 1.2-kilowatt panels should provide a third of the family's electricity. And when the sun isn't shining, the Days' power comes off the grid.

Builders remain reluctant

But even with the energy crisis, builders aren't diving wildly into solar. The reluctance springs from concerns about further hiking building

costs, lingering questions about solar's allure to buyers and legal worries in a state crowded with construction-defect lawyers.

Even at Shea Homes, which has seen its solar houses sell briskly, officials want more market analysis before fully committing to photovoltaics for developments still on the drawing board.

"We hope to do more," said Ryan Green, Shea's community development manager. "But if we put in solar, and people don't want it, they'll go somewhere else."

Solar is a standard feature on 100 houses in Shea's Scripps Highlands development. Another 166 offer it as an option to home buyers.

Though the development community forges cautiously forward, subsidies from the state and some utilities are slicing away a big chunk of financial risk.

But the goal of solar advocates is to grow the U.S. market so photovoltaics can compete without the government subsidies that have long been a prop.

Such market building is no easy task. The solar industry has seen boom and bust cycles before, most notably when subsidies evaporated after the 1970s energy crisis. Some boosters fear a similar scenario when the current problems fade. Instead of blindly ratcheting up production, company executives are putting a premium on sustainable business growth.

Howard Wenger, a vice president at Delaware-based AstroPower Inc., one of the nation's largest photovoltaic manufacturers, compares PV to development of the personal computer: "The first ones were very expensive, but they got more efficient and prices came down. We need to follow the same path."

particularly the development of a new generation of innovators — at the top of their political agenda for the coming elections.



"We're at a defining moment," John Doerr said Doerr, before dozens of key congressional and technology leaders of the New Democratic Network, meeting at the Fairmont Hotel yesterday. Doerr is a partner in the Menlo Park firm Kleiner Perkins Caufield and Byers. "The central battle is under way. . . . Opportunity, community, responsibility — these are themes we should keep hammering home."

Doerr's talk underscored both priorities for Silicon Valley, and the challenges before Democrats as they face the 2002 congressional elections — and the next presidential race. He called for the foundation of a \$2 billion Congressional Fellows Program, which would identify promising candidates in math, sciences and engineering — and then deliver individual scholarships to encourage them to seek higher education.

"I want the Bush administration to be a pro-science and pro-technology administration, but the budget they've submitted is not pro-science or pro-technology," he said.

Doerr said the nation must immediately launch dramatic efforts to "look out for the next decade," by calling on state and congressional leaders — and industry — to come up with large funding amounts that would go directly to the nation's most promising tech students, rather than to institutions or universities.

The idea was well received by some congressional members who said the call was both timely and critical.

The Bush administration "cannot be characterized as visionaries" in the arena of science and technology, said Democratic Rep. Cal Dooley of Hanford. "When you're cutting back on your basic investment in research and development, this is a prescription for reduced production in the future."

Doerr, a key political organizer in Silicon Valley, has long been one of the Democratic Party's most generous donors and one of its most influential tech voices as founder of the Technology Network, the valley's powerhouse advocacy group.

Doerr, an influential voice in the Clinton-Gore administration — and in the tech community nationwide — has long pushed tech insiders to use their know-how and wealth with an eye toward social responsibility. Educational policies, such as NetDay, the New Schools Venture Fund and more charter schools, have been particular concerns for Doerr and

► DOERR: Page A5 Col. 5

Government report cites conflicts of interest

By Eric Pianin
WASHINGTON POST

WASHINGTON — Scientists and experts who advise the Environmental Protection Agency on a broad range of regulations governing toxic chemicals and air and water quality frequently have ties to the affected industries or other conflicts of interest, according to a new government study.

and ensuring a proper balance of views among members of Science Advisory Board panels.

For example, four of the 13 panel members who studied the cancer risks of the toxic chemical 1,3-butadiene in 1998 had worked for chemical companies or industry-affiliated research organizations — including one who had worked for a company that manufactured 1,3-butadiene, according

In one case, seven of 17 advisory board members worked for chemical companies or for industry-affiliated research organizations. Five other panelists had received consulting or other fees from chemical manufacturers.

"The regulatory process benefits from scientific and technical knowledge, expertise and competencies of panel members," the report stated. "However, the work

The study, requested by Rep. Henry Waxman, D-Los Angeles, ranking Democrat on the House Government Reform Committee, is scheduled to be released today.

"The American people expect decisions that affect environmental and public health regulations to be based on unbiased science," Waxman said, "but this GAO study reveals polluting industries are in a position to influence panel

among EPA advisers

ings and recommendations" and pledged to improve operations and procedures, according to the GAO report. A spokesman for EPA Administrator Christine Todd Whitman said late Friday she had not seen the report and declined to comment.

The Science Advisory Board was established by Congress in 1978 to provide independent scientific and engineering advice to EPA administrators on the technical

technical rationales underlying current or proposed EPA regulations and policies.

By law, the panels must be "fairly balanced" in terms of the points of view represented, and the advice should reflect members' independent judgment.

Earlier this year, Greenpeace and the Center for Health, Environment and Justice, two environmental groups, complained about the makeup of a subcommittee of